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### Deposited in DRO:

04 May 2012

### Version of attached file:

Accepted Version

### Peer-review status of attached file:

Peer-reviewed

### Citation for published item:

McFarlane, C. (2011) 'The city as a machine for learning.', Transactions of the Institute of British Geographers., 36 (3). pp. 360-376.

### Further information on publisher's website:

<http://dx.doi.org/10.1111/j.1475-5661.2011.00430.x>

### Publisher's copyright statement:

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## **The city as a machine for learning**

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Revised for *Transactions of the Institute for British Geographers*  
Published 2011, 36: pp. 360-376

## **Abstract**

Despite its centrality to urban politics, economies and life, learning remains a neglected and undertheorised domain in urban geography. In this paper, I address this by exploring a politics of learning through two key sites: first, tactical learning; second, urban learning forums. I offer a conception of learning based on three processes: *translation*, or the relational distributions through which learning is produced as a sociomaterial epistemology of displacement and change; *coordination*, or the construction of functional systems that enable learning as a means of linking different forms of knowledge, coping with complexity and facilitating adaptation; and *dwelling*, or the education of attention through which learning operates as a way of seeing and inhabiting the world. I then consider this conception of learning in relation to tactical learning, i.e. the resources marginal groups use to cope with, negotiate and resist in the city, and urban learning forums, i.e. the possibilities for progressive forms of learning between different constituencies in the city. I conclude with an outline of a critical urbanism of learning.

## Introduction

The title recalls, of course, Le Corbusier's (1923) injunction that "a house is a machine for living in", an infamous provocation of the Swiss architect's machine aesthetic rhapsodically expressed in *Towards a New Architecture*. To no small extent, Le Corbusier's thesis was one of unlearning architecture and relearning urbanism. Gone, he insisted, are the craft skills of carpentry, masonry and joinery; instead houses should be built 'all of a piece', made by machine tools in factories and assembled through Fordist production lines. With one cursory eye to history and the other firmly on the possibilities of mass production, he argued that new rules and standards of assembly had to be learnt in order to mass produce housing through principles of geometric and functionalist efficiency, housing as a construction form with more in common with lightweight car bodies than the material diversity of the past. Whatever the strengths and shortcomings of Le Corbusier's claims and designs, the implicit but nonetheless crucial invocation of urban learning and relearning remains largely ignored in urban studies. This is not a paper about Le Corbusier's work specifically, but I begin with this example because I want to consider here not the house as a machine for living but *the city as a machine for learning*. Although learning is often neglected in work on urban politics and everyday life - marginalised as a background noise to the stuff of 'real politics' - I aim to recuperate learning as a political and practical domain through which the city is assembled, lived and contested, and which offers a critical opportunity to develop a progressive urbanism. What does a conception of the city as a learning machine reveal about urban change? What conceptual tools might we deploy as a basis for understanding the role and limits of multifarious forms of urban learning? What sorts of urban political epistemes might learning call into question?

This is not, of course, to suggest that learning has been entirely neglected in accounts of urban change; it has been discussed in debates on urban economies and, increasingly, in questions of travelling urban models or policies (e.g. Campbell, 2008; McCann and Ward, 2009; forthcoming; McFarlane, forthcoming; Peck and Theodore, 2010; UNDP, 2003). There has been a great deal of debate in economic geography, for example, about ‘learning regions’, ‘regional innovation’, ‘institutional thickness’, innovative ‘buzz’, skills development, the possibilities of knowledge mobility, and on the role of ‘clusters’, ‘quarters’, ‘creative economies’, and tacit knowledge (e.g. Amin and Cohendet, 2004; Bunnell and Coe, 2001; Cumbers *et al*, 2007; Cumbers and McKinnon, 2004, 2006; Florida, 2002, 2006; Gertler, 2003, 2004; Gertler and Wolfe, 2002; Glaeser, 1999; McKinnon, 2008; Scott, 2006; Scott and Storper, 2009). This work has critically engaged with, for example, the efforts of states and supranational bodies to identify and develop specialist clusters within cities and regions, often taking the form of R&D and venture capital initiatives “which attempt to inculcate a culture of innovation and learning” and seek to “build and reinforce a sense of cluster identity amongst constituent firms and organisations” (Cumbers and McKinnon, 2008: 959). There is much urban policy debate around, for instance, city cluster learning such as Agenda 21, or learning network formations from UN Habitat to Infocity.

As states and supranational institutions have increasingly focussed on knowledge-creation and learning as key to competitive advantage within global economies, a key debate in relation to clusters has been around how to create linkages and networks through clustering in ways that facilitate knowledge exchange and interactive learning. Here, proponents have advocated the importance of local links, face-to-face exchanges and ‘communities of practice’ (Wenger, 1998) for creating economically valuable tacit knowledge (i.e. implicit and experiential understanding formed through informal interactions that is difficult to move

around, Polanyi, 1966), while critics have questioned the extent to which knowledge creation is or should be 'local' rather than distanced, and emphasise the role of external connections to and through particular organisations, the internet, videoconferencing, exchanges across space through visits and conferences, and labour mobility (Amin and Cohendet, 2004). These debates, and their often close synergies with debates around organisational learning (e.g. Gherardi and Nicolini, 2000; Grabher, 1993, 2004; Nonaka *et al*, 2000; Wenger, 1998; Amin and Cohendet, 2004), have informed the conception of learning put to work in this paper, but as important as these debates have been, they have tended - not surprisingly given their economic focus - to restrict urban learning to questions of economic innovation, urban and regional competitiveness, and organisational learning, and have offered less in terms of critical engagement with power inequalities and exclusion.

More broadly, debates about the role of learning have a long history, particularly in relation to economic development, whether Schumpeter's (1934) *Theory of Economic Development* or Machlup's (1962) *Production and Distribution of Knowledge*, or contemporary debates on the 'knowledge economy' (e.g. Leadbeater, 2000), corporate discourses on knowledge management, and neoliberal prescriptions for 'smart' or 'creative cities' (Hollands, 2008; Peck, 2005; Florida, 2005). There is also, of course, a similarly complex history of debates on the nature, production and meaning of learning, with disparate influences from theories of epistemology (Greco and Sosa, 1999; Polanyi, 1966, 1969), genealogies of historical knowledge (Foucault, 1980), science studies (Latour, 1999; Callon *et al*, 2009), organisational studies (Amin and Cohendet, 2004; Wenger, 1998), cognitive anthropology (Ingold, 2000; Hutchins, 1998), and critical education and pedagogy (Fejes and Nicoll, 2008; Freire, 1970).

If these debates are varied and distinct, all of them contain one central claim or assumption about learning: that learning is an active process of potential transformation. Learning, even where it is explicitly described as uncertain - as in, for instance, strands of organisational theory that emphasise creativity and invention - refers to a process involving particular constituencies and discursive constructions, entails a range of inclusions and exclusions of people and epistemologies, and produces a means of going on through a set of guidelines, tactics or opportunities. As a process and outcome, learning is actively involved in changing or bringing into being particular assemblages of people-sources-knowledges. It is more than just a set of mundane practical questions, but is central to political strategies that seek to consolidate, challenge, alter and name new urban worlds. I aim to show this in this paper by moving through a range of urbanisms, particularly in relation to urban *tactics* and, in the lengthier illustrative example of the paper, urban learning *forums*. I end by offering an outline of a critical urbanism of learning. My starting point is not to attempt to identify what it is about urbanism that involves learning, but instead to begin with a conception of what learning is before we can locate it in the city. This means that while the nature of the tactics I discuss, or the form of the issues explored through forums, may be specific to urban spaces, processes and concerns, it is equally plausible that the conception of learning developed here might be applicable to non-urban contexts. That said, cities - as spaces of encounter and rapid change, of concentrations of political, economic and cultural resources, and of often confusing unknowability - are constantly sought to be learnt and relearnt by different people and for often very different reasons, from coping mechanisms and personal advancement to questions of contestation and justice. It is in this very concentration and demand of and for learning that the city is cast as a learning machine.

### **Conceptualising learning**

In the summer of 2008, I interviewed the leader of a small nongovernmental organisation in central Sao Paulo about her organisation's work and connections to an international urban movement of 'slum' activists. Anaclaudia Rossbach, the Director of *Internacao*, explained the importance of being part of this international movement: "We [*Internacao*] survive because of their methodologies". For Anaclaudia, being part of this wider international movement was first and foremost about *learning* from other people's experiences of addressing urban poverty. The movement she referred to, Slum/Shack Dwellers International (SDI), is an international movement working with urban poverty in slum settlements in over 20 countries, and Brazil is one of the more recent recruits in the shape of *Internacao*. I asked Anaclaudia about her experience of connecting to SDI, and she replied: "Talking is important, but I guess seeing it on the ground...you see that it has credibility". Anaclaudia first met members of SDI through a meeting of Cities Alliance, a network of governmental and nongovernmental organisations working on urban development, when she was working as a municipal officer in Sao Paulo. When the Workers Party lost power in Sao Paulo in 2004, she was in Durban attending Brazilian-South African exchanges on urban poverty with South African SDI leaders, and – having seen it 'on the ground' - decided to set-up *Internacao* to "implement SDI ideologies here in Brazil".

This particular moment from Sao Paulo reflects a central concern of this paper: that learning is crucial to how urbanism is produced and to how different constituencies respond to it. Learning is a central infrastructure of urban change, politics and everyday life. The long history of urban policy transfer has partly shown this, whether – to name just a few - Anthony Sutcliffe's (1981) *Towards the Planned City*, Ian Masser and Richard Williams' collection (1986) *Learning from Other Countries: The Cross-National Dimension in Urban Policy-Making*, Anthony King's (e.g. 2004) surveys of colonial urbanism, Joe Nasr and Mercedes



Volait's (2003) collection *Urbanism: Imported or Exported?*, or McCann and Ward's (forthcoming) collection, *Assembling Urbanism*. Emerging work on what Eugene McCann calls 'urban policy mobilities' (e.g. McCann, 2007; McCann and Ward, 2009) is one important example here. This disparate work has considered, for instance, how certain cities draw on particular policy discourses of urban redevelopment in urban plans, whether in the circulation of policy knowledges, discourses of 'knowledge cities', or neoliberal, revanchist and punitive ideologies (e.g. see McCann and Ward, 2009; Peck and Theodore, 2010; Peck, 2005, 2006; Ward, 2006; Wacquant, 2008).

If travelling urbanism is a far from new phenomena, urbanism is nonetheless increasingly assembled through a variety of sites, people, objects and processes: politicians, policy professionals, consultants, activists like Anaclaudia, publications and reports, the media, websites, blogs, contacts, conferences, peer exchanges, and so on. It appears we have seen a qualitative shift in the speed and intensity of policy mobility, as McCann and Ward (2009: 1) write: "As waves of innovation arrive more frequently, a concordant 'churning' has been identified in urban policy, with new ideas and initiatives replacing old with increased regularity...Contemporary policy-making, at all scales, therefore involves the constant 'scanning' of the policy landscape". These policy mobilities interact with and are translated through local histories and policy contexts in complex ways, from the circulation of revanchist policies through cities like New York to São Paulo or the travelling free-market ideologies propagated by think-tanks like the Manhattan Institute or Heritage (Peck, 2006), to variants of urban entrepreneurialism drawn from seductive 'success' stories like Shanghai and Singapore to Mumbai or Delhi, or the widespread "sale of community and boutique lifestyles" that accompanies the 'new urbanism' movement for city centre remodelling (Harvey, 2008: 32). Sometimes, of course, this is learning only in name and the purpose is to

confirm what is already known, or to support existing politico-corporate agendas, while in other cases urban learning may be reduced to a direct or indirect process of imposition or instruction rather than dialogue and reflection. The point here is the need to open up the constitutive relations between learning, power and urbanism.

If we look at debates on the future of urban development, we see that increasingly *learning itself* has become a seductive focus. For example, the last few years have seen numerous examples of cities designated as ‘knowledge cities’ (Castells, 1996), ‘creative cities’ (Florida, 2005; Peck, 2005), or ‘smart cities’. Reflecting on the “seductive” power of Richard Florida’s creative city thesis for “civic leaders around the world”, Peck (2005: 740) notes how “from Singapore to London, Dublin to Auckland, Memphis to Amsterdam; indeed, all the way to Providence, RI and Green Bay, WI, cities have paid handsomely to hear about the new credo of creativity, to learn how to attract and nurture creative workers, and to evaluate the latest ‘hipsterization strategies’”. Florida’s influential thesis, argues Peck (2005: 767, 768), casts urban competitiveness as cultural and economic ‘creativity’, and constitutes a seductive narrative for policy-makers in an increasingly busy, “fast policy market” characterised by the “travelling truths” of “portable technocratic routines”. Urban policy learning around ‘creative cities’ depends on the alignment of a range of actors and spaces, including conferences, websites, and policy blueprint documents. For Peck, the success of Florida’s travelling learning strategies lie in part in his promotional and presentational skills, but, more than this, must be viewed in the context of a broader agenda presciently identified by Harvey (1989) as ‘urban entrepreneurialism’, reflected in the upsurge in the number of consultancies offering advice to civic leaders – usually in the form of public-private growth coalitions - on promoting an urban environment of spectacle, play and gentrification to tourists, investors and young ‘creatives’. In this context, Peck argues, strategies to nurture a ‘creative’ class of

young innovative learners are effectively the latest incarnation of gentrification, in this case ‘third wave gentrification’ in which the local state assumes an increasingly active corporatized role in remaking the city for the middle classes (Lees, Slater and Wyly, 2008).

Despite this surge in critical literature on travelling urban knowledge and policy learning, there is little attempt to consider how learning itself might be conceptualised. I want to make three arguments in this respect. First, learning is always a process of translation. This underlines the importance of the spatialities of learning; the spaces through which knowledge moves are not simply a supplement to learning, but constitutive of it. Second, and following on from this, learning is not simply a process of accessing stored data, but depends on the (re)construction of functional systems that coordinate different domains. Third, while learning can be structured through the inculcation of facts, rules, ideas or policy models, in substantive practice learning operates as the ‘education of attention’ (Gibson, 1979; Ingold, 2000). This means that learning entails shifts in ways of seeing, where ‘ways of seeing’ is defined not simply as an optical visibility, but as haptic immersion. These three interrelated aspects can be summarised as *translation*, *coordination*, and *dwelling*. Each step in the argument focuses on the importance of appreciating learning as a distributed process that foregrounds materiality and spatial relationality, and of the city as pluralised, multiple learning machine.

### *Translation*

If translocal policy learning reveals a topological landscape of learning, translation offers four perspectives to this spatial topology. First, it challenges the diffusion model that traces movement as innovation (Latour, 1986; 1999). While the diffusion model focuses on travel as the product of the action of an authoritative centre transmitting knowledge, translation

focuses on travel as the product of what different actors do in and through *distributions* with objects (statements, orders, artefacts, products, goods, etc.) (Gherardi and Nicolini, 2000: 335). That is, translation emphasises the spatialities through which knowledge moves and seeks to unpack how they make a difference, whether through hindering, facilitating, amplifying, distorting, contesting, or radically repackaging knowledge. Second, this draws attention to the importance of various forms of *intermediaries*, and promotes two inseparable relational perspectives: first, the importance of relationships between the ‘near’ and ‘far’ in producing knowledge, for instance in the ways in which the internet or a policy exchange may make distant actors proximate; and second, the agentic capacities of materials in producing knowledge and learning, for example the differential and contingent role of urban plans, documents, maps, databases or models in producing, shaping and contesting urban learning (Amin and Cohendet, 2004). These intermediaries matter; translation is open to the possibility of varying degrees of stability and flux: it is not the case that every encounter must always involve change, nor is it the case that every encounter must always involve the recreation of a periphery in the image of a centre. Consequently, translation positions learning as a constitutive act of world-making, rather than occurring prior to or following from engagement with the world – i.e. it positions learning as, to paraphrase Derek Gregory (1999: 28) writing in the context of colonial cultures of travel, an *epistemology of displacement* in which travel is not a mere supplement to learning, but constitutive of it.

Third, given the focus on intermediaries and distributions, the geographies of translation centre on the idea of practice. The attention to practice collapses traditional dichotomies that separate, for example, knowing from acting, mental from manual, and abstract from concrete, that continue to contour ontologies of knowledge (Wenger, 1998: 48; Hutchins, 1996; Polanyi, 1969). If we reject the functionalist view of knowledge as static, bounded and fixed,

and argue instead for a view of knowledge as social, then the practices and materialities through which knowledge is formed are brought into view. Knowledge production is a process of heterogeneous engineering that demands a relational materialism (Thrift, 2000); a range of materials, from documents to infrastructures, make a difference in the production and movement of urban knowledge (Graham and Thrift, 2007). And fourth, knowledge – defined here as information which is anchored in practices, beliefs, and discourses (Nonaka, *et al*, 2000: 7) - is always partial and multiple. It is territorialized through various forms of inclusion and exclusion, meaning that it can be to varying intensities in or out of the ‘proper’ spaces (Law, 2000). The notion of ‘situated knowledge’ popularised most notably, of course, by Donna Haraway (1991), underlines partiality by focusing on the embodied nature and contingencies of knowledge production. But while situated, this knowledge is also mobile: it is formed not simply in place but through multiple knowledges that run through and call into being various spaces.

### *Coordination*

Translation always occurs in relation to multiple sites and objects, meaning that it requires coordination. Edwin Hutchins (1996) shows how distributed knowledge shifts learning from individual decisions or actions to allocations of collective agency, and indeed enables the agency of that collective. This requires, in Hutchins’ terms, seeing learning as ‘softening’ the boundary between individual and environment: “Learning is adaptive reorganisation in a complex system” (Hutchins, 1996: 288, 289). In these distributions, different phenomena act as mediators in learning, what Hutchins’ calls ‘mediating structures’, including language, models, procedures, rules, documents, instruments, traffic lights, market layouts, ideas, discourses, and so on (*ibid.* 290). One example Hutchins uses is that of the written artefact. In order to put a written procedure to work, people must coordinate with both the procedure and

the environment in which the actions are to be taken. Words, meaning, and world coordinate with each other over time, producing a kind of “situated seeing” that makes it difficult to clearly demarcate the individual and the outside (*ibid.* 300); there is no obvious point at which to cut the spatialities, materialities or temporalities of learning.

Hutchins’ case reminds us of the performative role of representation within learning, and insists that learning depends upon constantly *constructing functional systems that coordinate different domains*. Coordination is a process of sociomaterial adaptation. Fischer (2001), for example, shows how an urban planning experiment bridged a range of different interests across space through the assistance of an interactive electronic table – acting here as a coordinating mediator that aligns different actors by enabling people to jointly design and edit an urban lay-out (Amin and Roberts, 2008: 362). Richard Sennett (2008: 127-129) discusses learning as coordination in relation to ‘domain shifts’, referring to a practice or form travelling from one site to another, and highlights how urban plans (e.g. of infrastructure) coordinate domains as different as science, engineering, and social policy to produce a new way of seeing. These domain shifts – a kind of ‘reformatting’ (Sennett, 2008: 210), or ‘learning-by-switching’ (Grabher and Ihbert, 2006: 261) - constitute coordinating tools that can stimulate the imagination in learning new kinds of urbanism, and involve multiple translations that take place through dwelling in the world. The list of urban coordination tools is, then, a long one, and includes sites as mundane as travel timetables or maps as well as policy documents, blueprints, urban census databases, statistical databases of urban labour markets and investment histories, one-off events like policy conferences, study tours, exchanges of activists, and the town-hall meeting. They can function as what Latour (1999) has called a ‘centre of calculation’ in that they combine different forms of knowledge to make particular forms of thinking and calculation possible.

## *Dwelling*

In *The Perception of Environment*, Tim Ingold (2000: 4-5) examines learning in relation to skill and dwelling in the premise that people are always part of the process of coming-into-being of the world. From this perspective, a process like urban house construction occurs through attuning perception to objects and events in a process of immersion. This immersion, which Ingold (2000: 154) calls a 'dwelling perspective' inspired by Heidegger and phenomenology, insists that worlds are made, whether in imagination or 'on the ground', "within the current of their life activities". He takes this perspective to architecture and buildings themselves and argues that buildings are made through human involvement and are thereby continually under construction – an ontological claim that we might extend to other sites, such as policy-making or the production and circulation of urban plans. One implication is that meaning, for instance in relation to an urban policy, model or house, is "immanent in the context of people's pragmatic engagements" with the document, idea or building; meaning is located in the relational contexts of people's "practical engagement with their lived-in environments" (Ingold, 2000: 154, 168). This means that people learn to perceive, for example, policy, not just through organising data into representations or imaginings – i.e. not just through translation and coordination - but by 'hands-on' training in everyday tasks whose fulfilment requires a practised ability to notice and to respond to changing contexts: the ways in which we know, learn, coordinate, build and negotiate the city depend not just on the translation of knowledge, but what Ingold calls, after psychologist James Gibson, an 'education of attention' (Gibson, 1979: 254, Ingold, 2000: 166-167).

In this education of attention, learning through dwelling entails shifts in perception, a 'way of seeing' that is haptic – sensed, embodied, practised – and which positions learning as a

changing process of perceiving how to use the affordances of documents, objects and situations. What matters most about dwelling, as Heidegger (1971) suggests in relation to housing, is that people must *learn* to dwell. We are left, then, with a broad ontology of the city as a distanced and multiple learning machine based on three interrelated ongoing processes: translation, or the relational distributions through which learning is produced as a sociomaterial epistemology of displacement and change; coordination, or the construction of functional systems that enable learning as a means of coping with complexity and facilitating adaptation; and dwelling, or the education of attention through which learning operates as a way of seeing and inhabiting urban worlds. In the second half of the paper, I problematise this conception of learning in relation to a range of contemporary urbanisms, specifically tactics and forums.

### **Tactical urbanism**

The policy learning debates mentioned above are clearly one important site of departure for thinking about urban learning tactics, but given that the vast majority of urban lives are lived under conditions that are broadly conceived of as ‘informal’, it makes sense to develop a conception of urban learning from this context. Under the easy and unsatisfactory categorisation of informality lies a world of urban learning practices, below-the-radar of much Anglo-North American urban studies. It is crucial that in conceptualising ordinary forms of urban learning that this looming figure of informality is squarely tackled. This is not to set-up a binary of learning from ‘above’ (formal, policy) versus learning from ‘below’ (informal, local): there is no reason to presuppose that, for instance, the learning processes of ‘slum’ activists should necessarily differ in its structure or aims from that of professionalised urban policy consultants, even if there are important differences of influence, resource, scope and communicative styles. In briefly considering how urban learning operates in these



disparate contexts, I build on the preceding discussion by offering a conception of ‘tactical learning’. Here I have in mind the diverse modes of knowing the city involved in negotiating the always contingent gap between ‘marginal’ and ‘mainstream’.

One useful resource for conceptualising this negotiation is De Certeau’s (1984; De Certeau *et al*, 1998) work on strategy and tactics. Strategy refers to the “calculus of force relationships” sustained by a base of power once a subject becomes isolated (e.g. a governmental institution) (De Certeau, 1984: xix, 35-36). A tactic is a fragment that manipulates events and turns them into opportunities – its operation lies in ‘seizing the moment’, hence De Certeau’s (1984: 39) emphasis on the “utilization of time”. A tactic is a “calculated action determined by the absence of a proper locus”; unlike strategy, it does not demarcate an exteriority necessary for its autonomy: “The space of the tactic is the space of the other” (De Certeau, 1984: 37). Tactics ‘traverse’ and ‘infiltrate’ systems by playing out “the guileful ruses of different interests and desires”: “It must vigilantly make use of the cracks that particular conjunctions open in the surveillance of the proprietary powers. It poaches them. It creates surprises in them. It can be where it is least expected” (*ibid.* 34, 37). Tactics refer to the kinds of action that are possible once people have been marginalised by different strategies, and include a range of everyday forms such as speaking, walking, reading, and shopping. De Certeau is concerned with the ways in which, in trying to get by in ordinary life, people use practical knowledge of how things work that can then be translated into different uses and contexts; tactic, in the terms outlined above, is a resource of translation that is put to work through everyday urban dwelling.

There is a risk here of implying too rigid a separation of the official and the everyday, and there is a latent potential in De Certeau’s work of romanticising marginality (Iveson, 2007).

One useful corrective here is Hansen and Verkaaik's (2009: 13) notion of 'urban infrapower': durable assemblages of resources and connectivity. Urban infrapower names three domains through which people translate, coordinate and dwell in the city. The first is '*sensing* the city', "i.e. reading, reproducing and domesticating the urban soundscapes, the visual overflow, the styles, smells and a physical landscape that can be read through everyday mythologies of past actions, heroes, martyrs, events, danger" (Hansen and Verkaaik, 2009: 12). Here, sensing maps on to the notion of dwelling: we learn sensorially, through immersion in the urban landscape. The second is '*knowing* the city', "in the sense of decoding it, managing its opaque and dangerous sides, controlling and governing the urban landscape" (*ibid*, 12-13). Note here that they are not referring to any particular group or territory; we might be talking about policy-makers, community groups, street hawkers or taxi drivers. This includes informal knowing that enables particular forms of infrapower, for example in relation to poor neighborhoods: "Although popular neighbourhoods do appear to resist legibility, in James Scott's (1988) sense as a gaze of the state, such spaces are nonetheless navigated and interpreted by their residents on a daily basis" (Hansen and Verkaaik, 2009: 15). These neighbourhoods are home to people who possess "superior knowledge of these densely populated spaces: the hustler, the hard man, the wheeler-dealer" (*ibid*). This points to informal modes of knowing the city, to the 'performative competence' of urban registers, and to the 'urban specialist' "who by virtue of their reputation, skills and imputed connections provide services, connectivity and knowledge to ordinary dwellers in slums and popular neighbourhoods" (Ferguson, 1999; Hansen and Verkaaik, 2009: 16). In the schema of learning presented above, Hansen and Verkaaik's notion of 'knowing' refers to coordination devices – for example, the 'wheeler-dealer' is someone able to bring together a range of different knowledges and contacts and put that resource to work in various ways. The third domain is the capacity for 'urban gestures' and actions – registers of public performance

that are known to people in specific neighbourhoods, whether as individuals or as crowds (*ibid*, 13) – in other words, the role of gesture to facilitate learning by translating meaning between different groups.

As useful as this schema of urban infrapower as *sensing*, *knowing*, and *gesturing* undoubtedly is, for my purposes I would not wish to separate out ‘knowing’ from ‘sensing’ and ‘gesture’. Rather, sensing and gesture are important ways in which knowing takes shape and is communicated. Communication is crucial here; infrapower is always emergent, because it only shows itself in action or outcome, and is reinvented through action. The informal modes of knowing that constitute infrapower only become forms of power when they enable opportunities, i.e. become realised as tactics. The notion of infrapower is useful, then, in two ways. First, it specifies some of the different modes of knowing the city. Second, it highlights a caveat in De Certeau’s tactics in that it draws attention to the fact that tactics must be *learnt*. As Hansen and Verkaaik indicate in passing at several points, those mediators who possess urban infrapower because they are ‘in the know’ need to have learnt these particular modes of knowing the city. This notion of urban learning is critical to knowing as tactical praxis of actively assembling urbanism as a known.

We might consider here the wide range of ‘below-the-radar’ forms of learning people perform in order to cope with urban marginality, whether in the shape of subtle sociomaterial changes to compressed living spaces in informal settlements, or a street hawker’s attempt to facilitate the visibility of certain commodities (Pieterse, 2008: 113). We see this continuous effort in the makeshift urbanism that constitutes much of daily life for people within marginalised settlements, especially women who tend to take on the majority of household construction and maintenance. This makeshift urbanism, what De Certeau (1984: xv) may

have called bricolage, refers to “ways of ‘making do’” through schema of translation-coordination-dwelling, and connotes a key term often used in descriptions of informality: improvisation. This improvisation – whether in water or sanitation provision, or in electricity or housing - is forced upon many people in contexts of state welfare abandonment, often leading to complex coordinating systems that emerge as coping mechanisms. For example, reciprocal exchanges form the basis of insurance systems through which people borrow, lend, buy or sell between themselves, for instance in water exchange systems usually mediated through close family and friends (e.g. Moser, 1996). They are used particularly in times of stress to cope with risks or manage a range of uncertainties, and constitute what Simone (2008: 200) calls ‘everyday transactions’ that “facilitate, even at difficult and uncertain costs, the capacities of diverse urban residents to continuously make and adapt to conditions that keep the vast heterogeneities of urban life – its things, resources, spaces, infrastructures and peoples – in multiple intersections with each other”. These continuous efforts at urban maintenance and adaptation constantly draw on and alter different urban knowledges in complex regimes of tactical learning. They are borne from attempts to address marginality of different sort.

Indeed, as an ongoing process of tactical learning, improvisation is not – as it is commonly understood – straightforwardly spontaneous, ‘of the moment’, or mere *ad hocism*. It is learnt over time through the use of coordination devices – i.e. the (re)construction of functional systems, such as those of reciprocity – that manage a range of different domains. One example of this is the large industry of subsistence painters and artists within Indian cities employed in vehicular art on trucks or busses – typically elaborate, colourful, and endowed with political, thoughtful and/or humorous messages. As Swati Chattopadhyay (2009: 125) writes of bus art production in Kolkata, while these artists have their own distinctive

signatures and flights of imagination, they draw on a rich repertoire of existing cultural resources and motifs, from “three-dimensional representations of gods and goddesses, saints, and religious monuments such as the Golden Temple at Amristar, Kali Temple at Tarakeswar, and the Kaaba festooned with decorations”. The improvisational quality of the urban artwork emerges through, on the one hand, artists borrowing both from a craft tradition (which is rural and urban) as well as a literary tradition of poetry, political sloganeering, and street talk customs, and, on the other hand, through infusing these “with new images and events to create a realm of popular existentialism, advocating ways of negotiating and dwelling in modernity” (*ibid*, 129). Here, craft traditions that are made through learning-as-dwelling, i.e. embodied immersion in everyday practice and skill, are translated as they encounter different contemporary moments and instances (political debates of the day, moments in popular culture, etc). This inseparable mixture of habits of craft and literature with popular images and slogans is a tactic for making a living, but it is a tactic constituted by forms of learning that are at once spiritual, popular, traditional, fantastical, and modern.

If a certain repertoire of urban improvisation shapes this particular world of urban art and livelihood, improvisation is crucially important not just for livelihood but for tactics of urban resistance. For example, Jockin Arputham, the high-profile Mumbai activist who founded the Bombay Slum Dwellers Federation and who is now President of Slum/Shack Dwellers International, recounts his personal history of urban activism by highlighting a range of examples of tactical learning. In one example, he discusses tactics in relation to learning to manipulate telephone infrastructures:

We could keep organized and in touch with each other with the phones but our phone bill was very low because we discovered how we could use the public phone for free - by inserting a railway ticket into the receiver. This meant we could make all our phone calls to all the members of parliament. We also learnt how to block the

phones of ministers. In the Maharashtra assembly, there were questions asked as to how 30 ministers could have their phones cut at one time. We had designed this in Janata colony, with 100 people assigned one day to go to all the minister's houses. Blocking their phones takes just a simple wire and two stones. It made it sound as if the phone was permanently engaged. We could block all 30 ministers' phones at the same time - simply knowing where they were and shorting out their connections (Arputham, 2008: 333).

In this example, tactical learning takes the shape of improvised mediating systems such as railway tickets, or wires and stones, coordinating domains such as communication between activists, money saving, state disruption, and knowledge of where state ministers are at any given time. These materials acted as coordination tools that allowed the organisation to inhibit communication between officials, thereby bringing an advantage when organising demonstrations and protests. In addition, as leader of the movement, Jockin was constantly updating himself through the tactic of distributed learning: "I would be on the public phone – checking to see who was OK, who had escaped, who had been arrested. We had people with bicycles and rickshaws standing by" (*ibid*). Again, while particular moments appear as political opportunities that might be translated into, for example, a response to an arrest, the learning that Jockin refers to here emerges in the current of daily activities of urban dwelling - of organising, resisting, communicating information, and working with familiar materials in different ways. Urban learning in the context of improvisation involves acting within assemblages of multiple relations – reciprocal relations stretched between family and friends, negotiating the 'modern' and 'traditional', and delimiting the possibilities of resistance - which are coordinated in order to manage a field of uncertainties. This is not, of course, a cause for celebration; it is too easy to fall into the trap of romanticising the survival mechanisms that the poor are forced to improvise. The particular forms of improvisation of tactical learning described here may be adaptive and at times skilled, but they are often borne of exclusion and exploitation and are to different extents vulnerable to collapse.

## Urban learning forums

If the preceding discussion examined the learning of a range of marginalised groups in the city, one central question that emerges is around the scope for marginal groups to participate in the reassembling of urban life through learning with different constituencies. A key question here is what prospects exist for marginal groups to have their own voices centrally involved in urban planning and policy? This scope has been severely curtailed within many contemporary cities, where conflictual politics and participatory difference is often shunned by a culture of managerialism, consent and consultation. As Ash Amin (2006: 1018) has written, “the principle that urban public culture might be shaped through the free hand of a plural and equal citizenry has been compromised by an urbanism of differentiated rights and preordained expectations from the shared commons”. In contexts where urban marginals are increasingly “tracked, gathered and shunted on” as threats to cities more and more dominated by corporate and consumer spaces, the very idea that urban life should allow for pluralism and dissent is sharply truncated (*ibid*). As David Harvey (2008: 32) argues, this is an urban world that far from promoting urban participation is increasingly characterised by a “neoliberal ethic of intense possessive individualism” where the “political withdrawal from collective forms of action, becomes the template for human socialization”. Against this background, there is little potential that urban futures in many cities might be formulated through what Amin (2006: 1018-1019) calls ‘a politics of engagement rather than a politics of plan’, unless civic states place “confidence in the creative powers of disagreement and dissent, in the legitimacy that flows from popular involvement, and in the vitality thrown up by making the city available to all”. Amin’s conception of extending participation seeks to encode a heterotopic urban civic culture (Keith, 2005) that allows dissent, difference and disagreement while confronting violence and encouraging expansive solidarities.

Urban heterotopias of dissent and expanding solidarities are certainly important, but as critical urban and development studies literature has persuasively demonstrated, the participation of marginal groups is an often deeply unequal process. These disparate debates have variously criticised participatory initiatives as tools for governmentalising subjects – for instance, through depoliticising by rendering political questions as technical considerations – or as dealing with frivolous, short-termist concerns that only ‘soften’ neoliberalisms rather than address the causes of inequality and poverty (e.g. Atkinson, 1999; Cooke and Kothari, 2001; Williams, 2004; Sintomer *et al*, 2008). These criticisms notwithstanding, there have been instructive attempts to re-evaluate the possibilities of participation. For example, Glyn Williams (2004) highlights examples of participation actively enhancing the political capabilities of the poor, including the creation of new preferences, ways of seeing, new knowledges about rights and *de facto* rules of the game, and the politicisation of previously ignored issues. Arguing for a political imaginary attuned to participation’s claims to ‘listen’ and ‘represent’ – however problematic – and its implicit possibility of alterity, Williams (2004: 573) suggests that the progressive possibilities of participation are to be found “within long-term struggles and reshaped political networks that link themselves to a discourse of rights and a fuller sense of citizenship”.

In this context, I offer a conceptualisation of *urban learning forums*, where the forum is an environment specifically geared towards learning between different actors, including the state, donors, nongovernmental organisations, local groups, researchers and activists. In beginning to address this question, I wish to turn to a book that examines this issue in relation to science and technology controversies, Callon, Lascoumes and Barthe’s (2009) *Acting in an Uncertain World*. Contemporary uncertainties around science and technology, from nuclear



waste to genetic engineering, increasingly spill over into public debate (Whatmore, 2006). Callon *et al* attempt to consider how we might act in this uncertain world – what sorts of debate might proceed in what kind of contexts, and who might organise or facilitate these discussions? Knowledge controversies increasingly take place in what the authors call ‘hybrid forums’, public spaces in which a variety of groups discuss technical options, including experts, laypersons, politicians, and technicians, examining heterogeneous issues and perspectives from ethics to the economic, politics to the technical (Callon *et al*, 2009: 18). These hybrid forums are “an appropriate response to the uncertainties engendered by the technosciences – a response based on collective experimentation and learning” (Callon, *et al*: 2009: 18), within contexts of unequal power relations, defiant and dominant discourses, and questions over legitimisation.

Uncertainty here refers to knowing that we do not know. It is an explicit recognition of the role of ignorance and error as part of the learning process. Callon *et al* are not discussing urbanism here, but what is valuable for our purposes is the explicit recognition of the heterogeneity and uncertainty at work through forums as particular kinds of learning assemblages. This is not to say, however, that learning is necessarily a response to uncertainty. Indeed, urban learning can be a process of reinforcing existing positions and knowledges. However, a recognition of uncertainty is particularly important for learning forums that bring together heterogeneous groups and issues whose conclusions are purposively not pre-determined. This uncertainty and heterogeneity, Callon *et al* (2009: 28) argue, can enrich democracy through experimental formats; “with the hybrid forums in which they develop, they are powerful apparatuses for exploring and learning about possible worlds”. Learning here emerges from attempts to ‘take into account’ multiple voices, interests and expectations, i.e. the politics and uncertainties of translating and coordinating

different domains, where ‘translating’ refer to the extent to which the knowledge of different individuals and groups is understood or misinterpreted by others involved in the forum, and where ‘coordination’ refers to the ways in which particular formats, discussions and individuals or groups bring together and structure multiple voices and knowledges, sometimes in exclusionary ways. It does not involve integrating other voices into pre-existing technical solutions, but goes further towards collective engagement amongst the always present threat of claims to authoritative discourses. It is an optimistic reading of learning that potentially enables the production of new shared knowledge, ways of seeing and acting, and that emerges from two concerns. First, and within contexts of asymmetrical power, the unusual nature of confrontation between specialists and marginalised groups can force new lines of inquiry to be taken into account. At stake here is learning not just different forms of knowledge, but different ways of seeing issues – an education of attention. Second, there is - again, optimistically - a kind of attuned ear at work as different groups question their perception of each other through interacting, opening the way for compromises and alliances.

All of this occurs not through the simple addition of information or the aggregation of points of view, but through a form of urban dwelling characterised by trial and error, argument and conflict, inclusions and exclusions, and constructing and deconstructing, and the stakes are often high for particular groups. What sorts of criteria facilitate learning forums? Callon *et al* (2009: 153-190) identify three: *intensity*, *openness*, and *quality*, yardsticks for qualitatively measuring the extent of dialogism. Intensity refers to the formulation of the forum: how early on are marginal groups involved in the forum, and how intense is the concern around the composition of the collective? Openness refers to degree of diversity of the groups consulted and their degree of independence vis-a-vis established action groups, as well as the extent to which spokespersons are allowed to speak on behalf of their constituencies (thereby

potentially silencing marginal voices). Quality refers to the *seriousness* of voice - whether people are actually allowed to deploy their arguments and claims - and the *continuity* of voice, i.e. whether interventions are sporadic or lead to focussed conversations. These three criteria are then set against three procedures – equality of conditions of access to debates; transparency and traceability of debates, i.e. procedures to ensure that voices have been recorded; and clarity of rules in organising debates, ensuring that voices are heard and that dominant groups do not structure proceedings. In other words, intensity, openness and quality are measures of coordination - i.e. the extent to which the coordination of different groups and knowledges facilitates genuinely inclusionary, participatory discussion where different ideas are heard and translated – that need constant attention as they are played out in practice. While there are distinct echoes here of Jürgen Habermas’ (1962) conception of the public sphere in the focus on debate, discussion and exchange, Callon *et al* (2009: 263) dismiss this connection by arguing that – and this is a charge they also level at John Rawls and Hannah Arendt – Habermas imagines individuals stripped of their identities, attachments, anxieties, ambivalences, singularities and differences, and instead absorbed by nothing but their will to communicate. Callon *et al*’s claim here is that it is precisely the “attached and cluttered” nature of the individual that allows people to reach provisional understandings with one another through forums.

The three useful criteria of intensity, openness and quality can be applied – with due care - to urban learning forums which seek to bring together different people, knowledge and perspectives in the context of uncertain urban development. Some of the most promising experiments with urban learning forums have taken place in Brazil. In post-dictatorship urban Brazil, there has been a tradition of participatory democracy that has been particularly associated with its vibrant social movements and the *Partido dos Trabalhadores* (PT, the

Workers Party), especially in its high-profile successes in Porto Alegre. Before the PT assumed power in many Brazilian cities from the early 1990s, movements such as Rio's *Movimento de Associacoes de Barrio* (Movement of Neighbourhood Associations) experimented with establishing neighbourhood discussion forums and sought to make demands on the state. National movements like the 'Cost of Living Movement' operated in similar ways, and some Mayors under the military dictatorship sought methods of establishing participation. With the collapse of the military dictatorship and the PT's growth and eventual success in national elections has come decentralisation of power to local levels, especially through the 1988 Constitution, and the active participation of social movements and community groups in urban planning. The key urban success area to date for the PT has been in participatory budgeting, especially in Porto Alegre where there has been mass participation, elements of redistribution, and a balanced budget. Citizens decide and deliberate upon a variety of municipal policies, the cornerstone of which is the much-publicized *Orçamento Participativo* (Participatory Budget), a neighbourhood-based set of deliberative forums on the city's budget priorities.

As an experiment in participatory urban forums, Porto Alegre stands apart in Latin America for its scope and sustained commitment (Baiocchi, 2001; Sintomer *et al*, 2008). When the PT assumed power in Porto Alegre in 1989, there was already a thriving debate about participatory planning in the city. With one-third of the population living in favelas, the administrators responded to the challenge of involving the poorest in participatory planning by developing regional *orçamento participativo* assemblies in each of the city's 16 districts. Participation is two-tiered, involving both individuals and community organisations. Meetings begin in March, when delegates are elected to represent specific neighbourhoods, and the previous year's projects and budget are discussed. The number of regional delegates

elected per neighbourhood to participate in subsequent deliberations is decided based upon attendance. In the months that follow, these regional areas meet to discuss local and city-wide priorities, and to examine thematic areas like health or education. Finally, regional delegates come together at the regional plenary to discuss local priorities and to vote to elect councillors – whose term is limited to two years - to serve on the Municipal Council of the Budget (Baiocchi, 2001; Sintomer *et al*, 2008). Learning through participatory budgeting is coordinated by a strict and clear set of procedures for organisation, representation and participation.

This council is tasked with reconciling the demands from each region with available resources and proposing and approving a municipal budget in conjunction with members of the civic administration. Its 42 members and representatives of planning agencies meet biweekly for several months in this process. The local assemblies can change the rules on participation, voting systems, and topics for debate year-on-year if they choose to. These forums – which have led to higher levels of local participation year-on-year - function as a space for local demands and problems to be aired, for information to be divulged about the functioning of government, and as a regular meeting place for activists. In addition, as Baiocchi (2001) argues, the ongoing year-on-year cycle of debate and participation in local areas and city-wide allows space for people to learn from mistakes. He argues based on his research in three regions in the city that the key emphasis of local meetings is not in making decisions about budgets, but in learning about the technical criteria involved in budgeting.

These efforts have not, of course, been without their critics. As Baiocchi (2001) argues drawing on Bourdieu (1991), a central criticism of these sorts of participatory forums is that they reproduce class hierarchies, giving increased influence to local elites, and that they

reproduce hierarchies of political competence of ‘experts’ against nonexperts. In this critique of the fiction of ‘linguistic communism’ (Bourdieu, 1991), the competence to speak embodies difference and inequality - a privileged class habitus structures the technical ability to speak and the standing to make certain statements. However, Biaocchi (2001) argues that in Porto Alegre the poor actually participate more than the elites because the notion of ‘need’ is a primary motivator for the participatory forums *tout court*. Here, the notion of ‘need’ operates as a coordinating device that privileges the knowledge of the disenfranchised over that of the more elite. In addition, he points out that the average participant in regional meetings is of lower economic and educational standing than the average citizen of Porto Alegre. Neither, he continues, is there any evidence to suggest that those with higher levels of educational attainment have more chance of being elected – indeed, if anything the evidence suggests that the reverse is the case.

More importantly, in contrast to what we might expect to see if more powerful groups were manipulating the process, the vast majority of investment has gone to poorer areas of the city and has affected poorer citizens. In the years between 1992-1995 the housing department offered housing assistance to 28,862 families, against 1,714 for the comparable period of 1986-1988, while the number of functioning public municipal schools today is 86 against 29 in 1988 (Biaocchi, 2001). Sintomer *et al* (2008: 166, 167) write: “[Participatory budgeting] has provided for a reversal of priorities: primary health care was set up in the living areas of the poor, the number of schools and nursery schools was extended, and in the meantime the streets were asphalted and most of the households have access to water supply and waste water systems...[revised budgeting formula ensure] that districts with a deficient infrastructure receive more funds than areas with a high quality of life”. The extent and regularity of the municipal bus company was massively increased, thousands of families

received public housing or land titles, and a large network of daycare and health clinics was established (Goldfrank and Schrank, 2009). All of this was paid for through progressive taxation and a crackdown on tax evasion (*ibid*). However, if an alternative mode of urban dwelling is at stake in these learning experiments, none of this means, of course, that the views of the poor and the better-off register equally, and there is no reason to believe that participatory forums somehow undo existing inequalities. In addition, while there is no evidence of gender imbalances in terms of numbers at the meetings, there is some evidence that women are less likely to speak than men (Baiocchi, 2001).

Learning is a central part of the Porto Alegre forums. Baiocchi (2001) quotes one participant: “I had to learn about the process as the meetings took place. The first time I participated I was unsure, because there were persons there with college degrees, and we don’t have it, so we had to wait for the others to suggest an idea first, and then enter the discussion. And there were things from city hall in the technical areas, we used to ‘float.’ But with time we started to learn”. Through dwelling in forums over time people began to translate ‘technical’ knowledges in ways that facilitated their understanding and participation. Baiocchi (2001) goes on to argue that collective learning – as a process of translating and coordinating different domains - is a central part of the process as people from different backgrounds go through the process over the course of a year, learning about each other’s priorities and about the technicalities of budgeting, policy development, and the operations of different public services. Indeed, Sintomer *et al* (2008) argue that the establishment of transparent rules through urban learning forums has largely overcome clientelistic structures of urban planning that existed previously. City officials attend local weekly meetings, taking part as facilitators whose role is to foster rather than interfere with discussions. For Baiocchi (2001), rather than coopting the process, officials are involved in the co-production of new public institutions

experimenting with deliberative democracy. These institutions exceed the confines of the state while working, depending on context, in collaboration or opposition to it. For instance, the number of neighbourhood associations has grown exponentially since the participatory budgeting process began.

The success of urban participatory fora in Porto Alegre is, to be sure, partly a function of the city's relative wealth compared to other cities in Brazil. But it is about more than this. The municipal government, in the form of the PT, was committed to experimenting with participatory democracy and – crucially – was aware that this had to mean allowing autonomous civil society debates and institutions to flourish. Significantly, the success of the forums is a product of a commitment to particular ethic of learning as coordination, i.e. to long-term genuine participatory discussion that was able to be carried through. This coordination can be measured using the intensity-openness-quality schema. The *intensity* of the Porto Alegre participatory forums is reflected in the early involvement of different constituencies in the urban planning process and in the explicit concern that marginalised groups be involved, while the *openness* of the process is found in the combination of participatory and representative formats, allowing people to monitor what those elected on their behalf say. The *quality* of the process resides in the continuity through which participation is enacted, maintained, and evidenced in the redistributive budgets that result. However, as useful as the intensity-openness-quality criteria is, we need to be careful not to underplay the importance of the political context within which urban learning forums take place. Different political geographical contexts enable or hinder the possibilities of urban learning forums to flourish. Indeed, as Abers (2000) argues, it was a rare 'window of opportunity' in Porto Alegre that allowed participatory forums to succeed, a combination of a newly elected workers party committed to people-oriented development, and an active and



diverse grassroots movement determined to involve ordinary people in the post-dictatorship planning of the city. In the four consecutive mayoral terms in which the PT governed Porto Alegre (1989-2004), the PT was able to build on its existing largely middle class base by drawing in an extensive working class constituency by courting and eventually winning supporters of the Democratic Labour Party (PDT), but in 2004 the middle class deserted the PT and cost the party the municipal elections, Goldfrank and Schrank, 2009).

Nonetheless, the examples from Brazil raise the question of what sorts of procedures might function as practical tools for implementing urban learning forums. In their study, Callon *et al* (2009) highlight several: *focus groups*, which the authors view as useful in identifying priorities, but which are episodic and generally do not lead to changing relations between experts and laypersons; *public inquiries*, which Callon *et al* claim succeed only where there is genuine commitment to involve the public; *consensus conferences*, new expert-layperson forums that focus on particular issues by raising awareness, stimulating debate, and leading to the production of citizen reports – a meaningful start, but not often a sustained collaboration; and *citizens' panels and juries*, which often privilege local points of view but which are rarely about dialogue. If none of these procedures are themselves satisfactory for urban dialogic democracy, specific procedures will be more or less relevant for particular issues and at particular times and spaces. These four formats are clearly suited to the sorts of science and technology controversies that Callon *et al* (2009) write about, and urban experiments such as participatory budgeting offer an alternative set of procedures. However, there is no reason why, for instance, local focus groups could not be used to identify priorities in relation to, say, the construction of community facilities in a poor neighbourhood, neither is there any reason to ignore the possibility of urban consensus conferences whereby citizen reports would be produced on issues such as the locating of urban dumping grounds, perhaps

generating media attention. Urban learning forums should, then, be contingent on the issues at hand, and driven by an experimental ethos that is politically committed to collective learning. Moreover, rather than an appendage or bureaucratic procedure within urban planning, if they are to succeed they should be central to the very conception and nature of urban planning itself.

### **Towards a critical urbanism of learning**

If the city is a machine for learning, it is crucial that we open the black-box that learning has become. Doing so reveals both how central learning can be to the production of urbanism, and to the possibilities of learning as a site of progressive urban politics. But the critical purchase of the concept of urban learning is not simply in a call to know more of cities, but to unpack and debate the politics of knowing cities by placing learning explicitly at the heart of the urban agenda. Whatever the strengths and weaknesses of his designs, Corbusier vividly understood the importance of *relearning* urbanism as a basis for a new sort of urban life. This learning and relearning is based on three processes: translation, or the relational distributions through which learning is produced as a sociomaterial epistemology of displacement and change; coordination, or the construction of functional systems that enable learning as a means of linking different forms of knowledge, coping with complexity and facilitating adaptation; and dwelling, or the education of attention through which learning operates as a way of seeing and inhabiting the world. I have attempted to weave these three inter-related elements of learning – translation, coordination and dwelling – through the examples of tactical learning and urban forums in the paper. For instance, in the ways in which people learn to cope with inadequate water supply through reciprocal exchanges or develop the craft of painting buses through urban dwelling, i.e. through the current of everyday life activities, and at the same time are able to translate these forms of dwelling into particular political

moments or opportunities, from improvised water infrastructures to forms of resistance that hamper state telephone communication infrastructures; or in the ways in which urban forums act as coordinating devices that translate a variety of knowledges and voices that can be measured through a schema of intensity, openness and quality, and which can lead to the possibility of new, more socially just forms of urban dwelling.

In the sorts of tactical learning discussed in the paper, this conception of learning draws attention to how marginal groups coordinate different forms of everyday life, from water losses to resistance efforts, and in the process learn to see and live the city in particular sorts of ways. In this context, tactical learning constitutes, as Chattopadhyay (2009: 135) has put it, “an assemblage of fragmentary elements in space through which subaltern groups make room for themselves within a spatial structure that is not conducive to their existence”. We see this through the particular kinds of education of attention that urban improvisation entails, not as a field of informatics but as getting a ‘feel’ for dwelling the city through the senses in relation to fear, hope, fantasy, solidarity and so on. Tactical learning is a variegated set of resources that responds to the what Hansen and Verkaaik (2009) call the city’s ‘constitutive unknowability’ by performing a crucial role in how people come to cope with and advance their prospects in the city in often extremely difficult circumstances. The examples of urban learning forums show the progressive possibilities inherent in translating and coordinating different concerns and voices in the city, where the possibility of a more equal form of urban dwelling is at stake. Indeed, urban learning forums can generate tactics of their own. Even failed learning experiments can be important in the longer-term because the process itself can begin a formal relationship that may introduce new habits of working and challenge regimes of truth, as well as building capacities of engagement. In urban learning forums like those in Porto Alegre participatory budgeting programmes - integrated into urban planning not as an

appendage but as the very form of planning itself through sustained commitment from the state and pressure from civil society - there is the potential of transformation, and of the emergence of a different kind of city. As unlikely as these sorts of participatory learning experiments may often seem, we should not allow ourselves, in my view, to cede the ground to power by becoming overly cynical about the possibilities of collaborative and dialogic urban learning.

In closing, the – inevitability selective – examples of urban learning considered in this paper demand consideration of what a critical urbanism of learning might look like. Critical urban learning involves questioning and antagonising existing urban knowledges and formulations, learning alternatives in participatory collectives, and proposing alternative formulations. It entails exposing and *unlearning* existing dominant arrangements that structure urban learning practices and ideologies, whether in relation to gentrification and revanchist neoliberalism, or exclusive pronouncements of the ‘smart/creative’ city. As Neil Brenner (2009: 199; and see Marcuse, 2009) has argued, this aim of unmasking the “myths, reifications and antimonies that pervade bourgeois forms of knowledge” about capitalism, and offering alternatives, is central to the whole project of critical urban thought. What might a critical geography of urban learning involve? We might consider three inter-related aspects. First, it would seek to *evaluate* urban knowledges that are given as inevitable or ‘truthful’, such as elite claims that the city must neoliberalise, must invest in this area over another area, must privatise urban public services, and must limit the kinds of people who have access to public space or curtail the ways in which those public spaces might be used. In addition to critically examining these claims in their own terms, it would identify both how those claims serve dominant capitalist interests and reveal how learning-as-domination serves to close down choices.

Second, at the same time as exposing these urban knowledges as neither necessary or truthful, the task is to present an *alternative* set of urban knowledges, imaginaries, logics, and practices that entail learning a new kind of city. As Lefebvre (1967: 172, cited in Marcuse, 2009: 193) wrote in relation to rights to the city': "To the extent that the contours of the future city can be outlined, it could be defined by imagining the reversal of the current situation, by pushing to its limits the converted image of the world upside down". But if the contours of the future city are to be learnt, we need to consider who is involved in that learning. This, then, is the third task of a critical geography of urban learning: to identify *who should be involved* in learning new urbanisms, where they might come from, how that learning should take place in the project of developing a more inclusive, just, sustainable city. This methodopolitical task offers an unconventional research practice that might arrive at different objects and imaginaries of urban learning from those described above, and could entail experimental forms of learning initiatives (cf. Marcuse, 2009, on expose, propose, and politicize in respect to urban planning). From this perspective, the policy makers and consultants involved in that learning must be genuinely accountable to different voices and perspectives, for instance through the urban learning forums discussed above. In short, then, a critical urbanism of learning would, first, expose and *evaluate* existing urban knowledges and their impacts on different groups and places in the city; second, put in place processes that enable that learning process to be *democratic* and inclusive of different people with different knowledges from different parts of the city; and, third, *propose* a more equal, socially just, and ecologically sound form of urbanism through that democratic learning.

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